

US EPA ARCHIVE DOCUMENT

CATALOG DOCUMENTATION
EMAP-AGRICULTURAL LANDS PROGRAM LEVEL DATABASE
1994 AND 1995 MID ATLANTIC DATA
NASS JUNE ENUMERATIVE SURVEY PUBLIC RELEASE DATA

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1. DATA SET IDENTIFICATION

1.1 Title of Catalog document

EMAP-Agricultural Lands Program Level Database
1994 and 1995 MAIA Data
NASS June Enumerative Survey Public Release Data for 1994 & 1995

1.2 Authors of the Catalog entry

George Hess, North Carolina State University
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1.3 Catalog revision date

18 June 1997

1.4 Data set name

NASS June Enumerative Survey Public Release Data for 1994 & 1995

1.5 Task Group

Agricultural Lands

1.6 Data set identification code

| Data Set | Data Set ID |
|--|-------------|
| Resource Extent: June 1994 Evaluation Survey | 12 |
| Resource Extent: June 1995 Evaluation Survey | 13 |

1.7 Version

001

1.8 Requested Acknowledgment

If you plan to publish these data in any way, EPA requires a standard statement for work it has supported:

"Although the data described in this article have been funded wholly or in part by the U. S. Environmental Protection Agency through its EMAP-Aural Lands Program, it has not been subjected to Agency review, and therefore does not necessarily reflect the views of the Agency and no official endorsement should be inferred."

2. INVESTIGATOR INFORMATION

2.1 Principal Investigator

George Hess, North Carolina State University

2.2 Investigation Participant-Sample Collection

US Department of Agriculture / National Agricultural Statistics Service
Contact: Craig Hayes, USDA / NASS

3. DATA SET ABSTRACT

3.1 Abstract of the Data Set

This dataset contains public release information from the National Agricultural Statistic Service's (NASS) June Enumerative Survey (JES). The dataset contains aggregated information that can be used to calculate the extent of annually harvested herbaceous crops (Hellkamp et al. 1993) in the six Mid Atlantic states (DE, MD, NC, PA, VA, WV).

We did not use the hexagon sampling schemes used by the other EMAP resource groups. Instead, we used a sampling scheme developed by the National Agricultural Statistics Service. The NASS sampling scheme, described completely in Cotter and Nealon (1987) is a stratified, two-stage sample. During the June Enumerative Survey, NASS personnel collect data to estimate the extent of the agricultural resource. Expansion factors are provided for each secondary sample unit (segment) so that the area represented by the segment may be expanded to obtain state totals. Stratum and substratum are provided for each segment to allow variance calculations (see example).

The sampling scheme and intensity of sampling are designed to estimate cropland at the scale of individual states. Sub-state estimates may be inaccurate and will be highly variable.

3.2 Keywords for the Data Set

MAIA, annually harvested herbaceous crops (AHHC), extent, agricultural land, agroecosystem

4. OBJECTIVES AND INTRODUCTION

4.1 Program Objective

The Environmental Monitoring and Assessment Program (EMAP) was designed to periodically estimate the status and trends of the Nation's ecological resources on a regional basis. EMAP provides a strategy to identify and bound the extent, magnitude and location of environmental degradation and improvement on a regional scale.

The EMAP Agricultural Lands Resource group was charged with carrying out the EMAP mission on lands classified as agricultural.

4.2 Data Set Objective

This dataset contains public release information from the National Agricultural Statistic Service's (NASS) June Enumerative Survey (JES). We used these data for our extent calculations and to calculate some regional crop diversity and dominance measures.

4.3 Data Set Background Discussion

***We did not use the EMAP hexagon sampling scheme. The NASS sampling scheme we used is a stratified, two-stage sample. It is described completely in Cotter and Nealon (1987). You should refer to this document before using these data.

The data included in this dataset can be used to estimate the extent of annually harvested herbaceous crops (AHHCs) at state or multi-state scales. The NASS survey is not designed to calculate estimates at a sub-state level.

4.4 Summary of Data Set Parameters

| | |
|----------|--|
| STATE | State identifier (2-digit FIPS code) |
| SEGCODE | NASS Segment Identifier (scrambled) |
| YEAR | Year data collected (YYYY) |
| STRATUM | Segment stratum (coded number) |
| SUBSTRAT | Segment substratum (sequential number) |
| MEXPFCTR | Observation expansion factor (Real number) |
| MDGTZACR | Size of segment (acres) |
| AHHCAREA | Area of land in segment planted to annually harvested herbaceous crops (acres) |
| RICHNESS | Number of different annually harvested herbaceous crops in the segment (integer) |
| MAXCROP | Area of land planted to the annually harvested herbaceous crop with the largest area in the segment (acres). |

5. DATA ACQUISITION AND PROCESSING METHODS

5.1 Data Acquisition

5.1.1 Sampling Objective

The objective of the NASS JES is to estimate crop acreage at the state scale. We used it to estimate the extent of annually harvested herbaceous crops.

5.1.2 Sample Collection Methods Summary

SAMPLING DESIGN

***We did not use the EMAP hexagon sampling scheme. The NASS sampling scheme we used is a stratified, two-stage sample. It is described completely in Cotter and Nealon (1987). You should consult this reference before using these data.

5.1.3 Sampling Start Date

Conducted each June, 1994 and 1995.

5.1.4 Sampling End Date

5.1.5 Platform

5.1.6 Sampling Equipment

These data are collected through personal visits to farmers in the secondary sample units. Data are collected by NASS personnel on paper forms and entered into a computer at NASS state offices. Data from states are collected in the NASS national office.

5.1.7 Manufacturer of Sampling Equipment

N/A.

5.1.8 Key Variables

The SEGMENT is a unique identifier given to each NASS secondary sample unit. It may be used with regional cross reference tables (provided separately) to help locate the site.

5.1.9 Sampling Method Calibration

N/A

5.1.10 Sample Collection Quality Control

Standard NASS QA procedures were used throughout. NASS personnel are trained to work with farmers to ensure accurate data. Responses are screened by computer for consistency; sites at which problems are identified are revisited. The EMAP Agricultural Lands Group also checked data for consistency with respect to annually harvested herbaceous cropland acreage.

For more detailed information on NASS QA procedures, consult the EMAP Agricultural Lands references cited below in Section 11, or contact Craig Hayes at USDA/NASS.

5.1.11 Sample Collection Method Reference

Cotter and Nealon 1987.

USDA NASS. Agricultural Surveys: Interviewer's Manual (published periodically). USDA National Agricultural Statistics Service, Washington, DC.

USDA NASS. Area Frame Design Information (updated annually).
USDA National Agricultural Statistics Service, Washington, DC.

5.2 Data Preparation and Sample Processing

Not applicable

6. DATA MANIPULATIONS

The raw JES contains an entry for every field in the secondary sample unit (segment).

The total area of annually harvested herbaceous cropland in each segment was calculated by adding up the values for all fields in the segment; this total value is reported in this dataset (as AHHCAREA).

RICHNESS, the number of different annually harvested herbaceous crops in the segment, was calculated by simply adding up the number of different AHHC's planted in the segment.

MAXCROP, the area of land planted to the AHHC with the largest area in the segment, was calculated by adding up the area of each AHHC in the segment and selecting the largest value

6.1 Name of new or modified values

Not applicable.

6.2 Data Manipulation Description

Not applicable.

6.3 Data Manipulation Examples

Not applicable.

7. DATA DESCRIPTION

7.1 Description of Parameters

| Parameter SAS Name | Data Type | Format | Parameter Label |
|-----------------------|--------------|--------|--|
| STATE | Num | I2 | State identifier (2-digit FIPS code) |
| SEGCODE | Num | I5 | Segment Identifier (arbitrary number) |
| YEAR | Num | I4 | Year data collected (YYYY) |
| STRATUM | Num | I4 | Segment stratum (coded number) |
| SUBSTRAT | Num | I2 | Segment substratum (sequential number) |
| MEXPFCTR | Num | F10.3 | Observation expansion factor (Real number) |
| MDGTZACR | Num | F10.3 | Size of segment (acres) |
| AHHCAREA | Num | F10.3 | Area of land in segment planted to annually harvested herbaceous crops (acres) |
| RICHNESS | Num | I4 | Number of different annually harvested herbaceous crops in the segment (integer) |
| MAXCROP | Num | F10.3 | Area of land planted to the annually harvested herbaceous crop with the largest area in the segment (acres). |

STATE 2-digit FIPS code for state

10 = Delaware
24 = Maryland
37 = North Carolina
42 = Pennsylvania
51 = Virginia
54 = West Virginia

SEGCODE NASS segment identifier. This is an arbitrary number that identifies a NASS sample segment -- an area of land that is completely enumerated. Segment size varies with stratum. SEGCODE is scrambled from original NASS SEGMENT.

YEAR The year in which the data were collected.
Data from 1994 and 1995 are included in the public release dataset.

STRATUM The segment's stratum. NASS stratifies samples for the JES by intensity of cultivation. Strata definitions vary by state and are defined in the NASS Area Frame Design Information publication. Not all strata are present in all states. See Cotter and Nealon (1987) for details.

13 = >50% cultivated
20 = 15-50% cultivated
21 = 15-50% cultivated (large segment, MD only)
31 = Agri-urban: >20 homes per square mile
32 = Commercial: >20 homes per square mile
33 = Resort: >20 homes per square mile
40 = <15% cultivated
50 = Non-agricultural

SUBSTRAT The segment's substratum. This is required to calculate variance estimates on extent. See Cotter and Nealon (1987) for details.

MEXPFCTR This is the expansion factor associated with this segment.
The expansion factor is a multiplier used to expand this observation to the area it represents.

MDGTZACR This is the size of the segment, in acres, as digitized from the NASS area frame map during sample frame development.

AHHCAREA This is the area of land, in acres, in the segment that is planted to Annually Harvested Herbaceous Crops. This area was calculated by summing the appropriate values for individual (confidential) observations in the segment.

RICHNESS This is the number of different Annually Harvested Herbaceous Crops in the segment.

MAXCROP This is the area, in acres, of land planted to the annually harvested herbaceous crop with the largest area in the segment. In other words, this is the dominant AHHC in the segment.

7.1.6 Precision to which values are reported

7.1.7 Minimum value in data set

Not applicable

7.1.8 Maximum value in data set

Not applicable

7.2 Data Record Example

7.2.1 Column Names for Example Records

| STATE | SEGCODE | YEAR | STRATUM | SUBSTRAT |
|----------|----------|----------|----------|----------|
| MEXPFCTR | MDGTZACR | AHHCAREA | RICHNESS | MAXCROP |

7.2.2 Example Data Records

| | | | | | | | | | |
|----|---|------|----|---|--------|---------|---------|---|---------|
| 10 | 1 | 1995 | 13 | 1 | 35.700 | 564.000 | 391.400 | 3 | 179.700 |
| 10 | 2 | 1995 | 13 | 2 | 35.700 | 476.000 | 163.000 | 5 | 119.000 |
| 10 | 3 | 1995 | 13 | 3 | 35.600 | 517.000 | 338.300 | 6 | 197.000 |
| 10 | 4 | 1995 | 13 | 1 | 35.700 | 472.000 | 250.600 | 5 | 117.200 |
| 10 | 5 | 1995 | 13 | 2 | 35.700 | 552.000 | 416.900 | 5 | 336.300 |

8. GEOGRAPHIC AND SPATIAL INFORMATION

8.1 Minimum Longitude

N/ A

8.2 Maximum Longitude

N/ A

8.3 Minimum Latitude

N/ A

8.4 Maximum Latitude

N/ A

8.5 Name of area or region

Mid Atlantic Region - DE, MD, NC, PA, VA, WV

9. QUALITY CONTROL AND QUALITY ASSURANCE

9.1 Data Quality Objectives

Not Applicable

9.2 Data Quality Assurance Procedures

Standard NASS QA procedures were used throughout. NASS personnel are trained to work with farmers to ensure accurate data. Responses are screened by computer for consistency; sites at which problems are identified are revisited. The EMAP Agricultural Lands Group also checked data for consistency with respect to annually harvested herbaceous cropland acreage.

For more detailed information on NASS QA procedures, consult the EMAP Agricultural Lands references cited below in Section 11, or contact Craig Hayes at USDA/NASS.

10. DATA ACCESS

10.1 Data Access Procedures

Data can be downloaded from the EMAP web site.

10.2 Data Access Restrictions

N/A

10.3 Data Access Contact Persons

N/A

10.4 Data Set Format

ASCII text

10.5 Information Concerning Anonymous FTP

N/A

10.6 Information Concerning WWW

Data can be downloaded from the EMAP web site.

10.7 EMAP CD-ROM Containing the Data Set

N/A

11. REFERENCES

Campbell, C.L. et al. Environmental Monitoring and Assessment Program - Agroecosystem Pilot Field Program Report - 1992. EPA/620/R-94/014. US EPA, Washington, DC.

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Cotter, J. and J. Nealon. 1987. Area Frame Design for Agricultural Surveys. USDA, NASS, Research and Applications Division, Area Frame Section, Washington, DC.

Heck, W.W. et al. Environmental Monitoring and Assessment Program Agroecosystem 1992 Pilot Plan. EPA/620/R-93/010. US EPA, Washington, DC.

Heck, W.W. et al. Environmental Monitoring and Assessment Program Agroecosystem Monitoring and Research Strategy. EPA/600/4- 91/013. US EPA, Washington, DC.

Hellkamp, A.S. et al. Environmental Monitoring and Assessment Program - Agricultural Lands Pilot Field Program Report - 1993. EPA/620/R-95/004. US Environmental Protection Agency (EPA), Washington, DC.

USDA NASS. 1993. Agricultural Surveys: Interviewer's Manual June 1993-May 1994. USDA National Agricultural Statistics Service, Washington, DC.

USDA NASS. 1994. Area Frame Design Information (updated annually). USDA National Agricultural Statistics Service, Washington, DC.

12. TABLE OF ACRONYMS

AHHC - Annually harvested herbaceous crop
EMAP - Environmental Monitoring and Assessment Program
EPA - Environmental Protection Agency
JES - June Enumerative Survey
NASS - National Agricultural Statistics Service
USDA - United States Department of Agriculture

13. PERSONNEL INFORMATION

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